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Translator Education at a Crossroads: the Impact of Automation

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Abstract: Automation is affecting all spheres of our daily lives and humans are adapting both to the challenges that it poses and the benefits that it brings. The translation profession has also experienced the impact of new technologies with Language Service Providers adapting to changes (Presas/Cid-Leal/Torres-Hostench 2016; Sakamoto/Rodríguez de Céspedes/Evans/Berthaud 2017). Translation trainers are not oblivious to this phenomenon. There have indeed been efforts to incorporate the teaching of digital translation tools and new technologies in the translation classroom (Doherty/Kenny/Way 2012; Doherty/Moorkens 2013; Austermühl 2013; O'Hagan 2013; Gaspari/Almaghout/Doherty 2015; Moorkens 2017) and many translation programmes in Europe are adapting their curricula to incorporate this necessary technological competence (Rothwell/Svoboda 2017). This paper reflects on the impact that automation and, more specifically machine translation and computer assisted tools, have and will have on the future training of translators and on the balance given by translation companies to language and technological skills.

Keywords: automation and translation training, future-proofing the profession, training the trainers

1 Introduction

Automation is present in our everyday lives and it is now unstoppable as machines and Artificial Intelligence (AI) are undertaking tasks previously carried out by humans (Frey/Osborne 2013). As a result, technological advances are causing a disruptive effect in most jobs, including the translation profession (Kenny 2017).

Translators are in a particularly interesting position. The context in which they now work is very different from the past. First, the internet and advances in

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information technology in the twenty-first century have paved the way for the democratisation of publication of knowledge, i.e. anyone with access to the necessary hardware and software and reasonable IT skills can contribute to the information and opinion available on the internet. In the world of work these flows of information permit increasing globalisation, i.e. they allow "global business to operate at a global level in real time" (Cronin 2013: 492). Access to these flows of information is only blocked by the competence of the readers – do they understand the language in which the information and opinion is published? If not, how will they access translations? Translation is crucial to the process.

Second, the internet not only permits flows of knowledge, it also promotes new networks and interactions crossing old political and cultural borders. In theory, anyone who has a computer or mobile phone anywhere in the world can be in contact with anyone else. The technology is there. But again, the major block to breaking down barriers is language difference. Who will mediate among different language groups? Translators are crucial to the process.

In the profession there is full awareness of growing demand and need. The term localization, which is a direct result of globalisation, is in fact used to describe the translation transfer of digital products such as software or websites into different languages so that they can reach different audiences across the world (O'Hagan 2013: 506).

Information technology which has increased demand for translation has also provided solutions to deal with it. Digital technologies such as Machine Translation (MT) and Computer Assisted Tools (CAT), translation memories and terminological databases and glossaries, with varying degrees of usability are now common place in the translation industry and have played a big role in facilitating the localization of texts. Indeed, high volumes of texts needing translation and tight deadlines have led many international institutions and Language Service Providers (LSPs) to embrace automation although not all at the same level of sophistication and innovation as we will see later.

In this changing context higher education institutions also need to keep abreast of technological developments if the aim is to prepare future-proof professional translators. The challenges are various and wide-reaching including ensuring the inclusion of authentic digital technologies activities in the classroom when they are constantly evolving and re-defining the role of translator trainers in an ever- changing professional training landscape.

The aim of this paper is thus to present an overview of the impact of automation in the profession and the impending challenges for translator training. In particular, given the changing IT landscape that I have described, it is not just a question of dealing with ever increasing flows of knowledge needing translation, it is not just a case of experts employing ever more sophisticated tools to aid such

translation, it is also a case of taking on board a whole new paradigm and shift. In the past, translation was a top down activity in the sense that translators were 'expert bilinguals' who mediated between language groups. Translators were judged on their ability to handle two standardised language systems. However, in the present day we also have a bottom up process. Machine translation increasingly sources the data that it uses for its algorithms from texts created by ordinary people who do not necessarily have solid linguistic or language training, and whose preoccupation is rarely to produce accurate standard language.

Translation now contains an element of crowdsourcing: the use of millions of texts created by ordinary people to provide translation models and equivalents permits tools such as Google Translate. More and more platforms (e.g. Facebook, Twitter, LinkedIn) turn to their users for decisions on the appropriacy and accuracy of translations. We cannot yet know how this will influence prescription, the adherence to standards and the top down influence of language professionals, but we do know that there will be an effect. We already see very odd machine translation outputs which could be the outcome of incorrect source data and we already see a threat to translation as a profession, since translations can be seemingly carried out for free by a programme or anyone on the internet.

As university translator trainers, our responsibility is to ensure that students are equipped with a sound academic knowledge that includes linguistic, cross-cultural and translation skills where technology is increasingly taking a centre stage. What should be the balance in the teaching of these skills? Are employers finding that applicants have the competences they require? (OPTIMALE final report, 2013). To answer these questions, I am conducting observational studies at translation companies taking a phenomenology approach based on action research and the results of my pilot study are presented in this article.

2 Innovations in Machine Translation and Artificial Intelligence

The use of MT has been gaining ground in the last decades in the translation profession. Rule- based MT, created in the 1960s, uses databases with grammatical rules and fixed lexical structures to transfer meaning. This system gave way to the evolution of a phrase- based Statistical MT, over the last twenty years or so. An improvement on its predecessor, its databases "memorise" observed patterns and the output is more fluent although it still features limited control over the patterns learnt. Neural Machine Translation (NMT), a recent costly system is currently being explored by LSPs and translation software vendors. For example, one of the

leaders in the market, Systran, is investing in NMT by developing their own PNMT (Pure Neural Machine Translation) applying artificial neural networks to natural language processing. This system has represented a big leap in translation quality output (Labroue 2018).

Another MT engine- DeepL produces reliable output for texts containing complex terminology in a few language combinations. Post-editing the output mostly involves adapting it to stylistic conventions, changing the length of paragraphs or sentences and checking for any misreading of ambiguities. Google Translate is another major stakeholder also investing in NMT thanks to which outputs are becoming more useable facilitating the translation process in texts that are of a repetitive nature. Recently, errors are becoming less frequent and they are more difficult to spot as translations are becoming more idiomatic than when rule-based and Statistical MT were used (there are now fewer mistranslations and omission, addition and word order errors) (Moorkens 2017).

The colossal nature of MT involves the translation of billions of words in millions of texts. However, Artificial Intelligence may pose a high risk to the translator's role if machines do the bulk of the translation leaving content to be post-edited by humans. For instance, a cloud- based cognitive platform from Microsoft, Azure, has released an API (Application Programme Interface) that enables developers to add end-to-end, real-time speech translations to their applications or services" (n.d). This adds another dimension to the traditional human cognitive act of translating as the translator's input comes into play in the later stages of translation production (Rodríguez de Céspedes 2018).

There is no doubt that AI will continue to evolve and the technological advances of today will be made obsolete in the next few years. However, currently MT has a space in the profession. At transnational level, for example, the European Commission launched their own online machine translation service called e- Translation in 2017 building on their previous machine translation service (MT@EC) to meet their high translation demand. It features high security, it is free of charge and translates from and into any of the 24 European Union official languages and Norwegian- a total of 600 language pairs. It can translate several documents into different languages at the same time amongst other features. However, the Commission claims that the service still only "produces raw automatic translations. (One can) use it to grasp the gist of a text or as the starting point of a human-quality translation. If you need a perfectly accurate, high-quality translation, the text still needs to be revised by a skilled professional translator" (European Commission, e-Translation 2017). Thus, despite the quick automatic turnaround of translated raw data done by the machine, human intervention is needed to edit the content to produce a finished product and meet the Commission's quality criteria.

These technological advances are also seen elsewhere in the profession. A survey conducted by five major European Language Industry Associations and the EMT (2017) revealed that the larger LSP segment (64 %) was actively introducing MT in their workflow. This survey[1] also looked at the use of CAT tools and it noted that only 10 % of all companies surveyed were operating without them. In 2018, the same survey showed that less than 1 % of the companies reported that they are not using CAT tools, compared to 13 % of individual language professionals, hence in only one year the increase in the use of CAT tools is notable and we can therefore witness a noticeable uptake of both MT and CAT tools in the profession.

At local and regional levels, this trend contrasts with current professional practices. In some contexts, the use of CAT tools by some smaller companies and freelancers is still seen as a threat to the profession and MT is still considered a major concern as some fear that it will take over translation jobs (Presas/Cid-Leal/Torres-Hostench 2016). Another study analysing the state of the Spanish translation sector (Rico Pérez/García Aragón 2016) concluded that whilst 85.7 % of the collected 175 responses acknowledged to make use of CAT tools in their workflow, only 17.5 % used MT. Interestingly, project managers from the UK LSPs consulted on a focus group study confirmed that in most cases, they are unaware of whether their freelance translators are using MT in their translation processes or not (Sakamoto/Rodríguez de Céspedes 2017). This study concluded that there was not a consensus as to who uses CAT tools or MT, and that the use of digital technologies varies greatly from company to company and from year to year due to the fast-paced creation of new automated technologies. In fact, although automated technological advances are moving fast, surveys do not seem to encapsulate the status quo fast enough. Naturally, all published data is still useful to examine this ever- evolving translation automation state of play but the data is very much here and now and not necessarily future-proof.

In sum, there is no doubt that automation has advantages for the translator in a professional setting such as quick turnaround of raw translated texts that are getting better in quality output and are saving human time to do repetitive work of the same nature (speed and efficiency). MT can nonetheless lower the salaries of translators in a market where there is already competition because of crowdsourcing and fan translation (Garcia 2015; Flanagan, 2016; O'Hagan 2017). MT can also be a costly investment for companies and it is also seen by some as a threat to the profession as current surveys above demonstrate. However, there are deeper issues that need consideration here: if language, which is an intrinsic human skill,

1 The survey received 866 valid responses from 49 different countries

can be replicated by machines and translations can now partly (or, in some cases, mostly) be carried out by MT and crowdsourcing- how do we prepare translation students for the human role in translation? How can university educators be trained themselves to keep up with industry technological developments?

3 Implications of Automation for Translator Training

Translation training is now a well-established, consolidated field within Translation studies, but automation has brought about a few burning issues. The increasing use of technology is one of them as it has affected the traditional translation cognitive process model (Quah 2006; Rodríguez de Céspedes 2018) whereby the act of what we call translation (the transfer of all source text messages into a target text) is not merely an intrinsic human act anymore if MT and CAT tools are used to facilitate the process. Furthermore, new advances in AI and MT such as NMT challenge the Aristotelian framework described by Frank 2007 in Kristal (2014: 30) by which translation "attempt(s) to generate the appropriate linguistic signs that correspond to what needs to be transferred from one language to another: thoughts, representation of objects, emotions…". Admittedly, this definition still holds true in some genres such as the translation of literature as illustrated by Basnett (2014) when describing the intellectual human cognitive intricacies involved in the highly creative act of translating poetry although more studies are needed to analyse the implications of translation of literature by machines (Beens 2018). In addition, MT output is only of higher quality in some of the most common highly invested language combinations because of the volume of source material needing translation but not on the rarest as attested by Koponen (2016). What are then the implications of this shift of translation processes from human to machine in translator training? Have they been addressed in Translation Studies?

3.1 Professionalisation of Translation Studies and Paradigmatic Shifts

The translation curriculum is at a crossroads: on the one hand, still based on the traditional translation principles and cognitive processes; on the other, reaching out to include professional practices and market needs where automation and AI play a major role. There has been a rise of institutions offering translation studies

in the last decades and a myriad of scholarly activity venturing into new translation research areas outside the traditional contrastive linguistics field. There has also certainly been an evolution in the training provided by academic institutions as they bring authentic professional practices into the classroom and empower the learner in the process by becoming an experiential learner in situated learning contexts (Kiraly 2000, 2005, 2015; Massey 2005; González- Davies and Enríquez Raído, 2016), however there is still a need to research the impact of translation technologies in the training of translators both by translator trainers and translation companies. The top-down professional and translator training paradigmatic approach, where both sound knowledge of linguistic (and related language) skills and use of new technologies are fostered, is now being confronted with a bottom up paradigm with the mushrooming of translations being carried out either by the "crowd" (crowdsourcing and fan translation) or published without rigorous linguistic quality controls (O'Hagan 2011; Drugan 2013). This means that MT and AI do not represent the only threat to translation practice as we know it, MT and AI cannot be solely blamed for bad quality translations because the source of these faulty translations come from corpora, term bases and algorithms created by humans including non-professional translators without a proficient linguistic background. In effect, this means that the paradigm is now moving away from standard linguistic systems (top down) to an audience standard language system (bottom up). As there is a reluctant resistance among professional linguists to engage with what they see as incorrect (but threatening) translation practices, how does translation training reconcile this shift? How do we teach linguistic skills when bottom up practices are starting to be commonplace?

3.2 Evolution of Translator Training

Translation has been taught as an object or product where traditional linguistic approaches and dichotomies between source and target text equivalence are analysed as a pivotal element of the curriculum and where translation strategies are contrasted in a continuum depending on the target text bias towards the source or target language. These strategies are 'labelled' accordingly by translation scholars and they are used in the classroom to assess the level of equivalence between source and target texts: literal versus dynamic translation (Nida), semantic versus communicative (Newmark) literal versus idiomatic (Hervey/Higgins), foreignizing versus domesticating (Venuti). Students' translations have also been assessed by their level of loyalty to the source text or the level of adequacy depending on the translator's brief (Nord 1997). Functionalism and skopos theory (Reiss/Vermeer, 2005) brought professional practices closer to the curriculum by introducing the

translator's brief and commission: what is the purpose of the ST and TT? (motive) Who is it for? (audience) Where is the TT going to be published? (medium) etc. Undoubtedly, this traditional system of translation analysis (see Munday 2016 for detailed descriptions and shortcomings of traditional models and theories) is still useful for the introduction of basic translation principles in the classroom and translation commissions and briefs are indeed used in the professional world, hence there is still a place in the curriculum for these elements as they foster a reflective component based on the translation process and the product that hones critical thinking.

In this context, Colina/Venuti (2017: 213) also give a useful overview of teaching practices and pedagogical strategies but do not consider how technology might affect these practices and still focus on the traditional contrastive linguistic stand of translation as a product rather than a process. However, the reality of the impact that new translation technologies has on the translation training field seems to be ignored (Kenny 2017). Indeed, there seems to be very sparse empirical research on the new cognitive processes that technology has brought about in the profession (Paulsen-Christensen/Schjoldager 2011; Bundgaard/Paulsen-Christensen/Schjoldager, 2016) as translation as a process does not take place exclusively within the brain of the translator anymore (Bakalu 2013).

Other recent studies have focussed on the role of translation as a process rather than a product where the translator's mental and cognitive processes are for example analysed via think- aloud protocols or there are more recent studies on the cognitive and physical ergonomics of translation (Ehrensberger-Dow/Massey, 2017) and a shift to study the translator as a subject. Inspired by Latour's actor network theory (2005), some scholars are also now focussing on the agency of translators and project managers in the translation profession. These studies are useful as they examine professionals in action and findings may inform practices in the classroom- a timely focus if educators want to provide students with a realistic insight into the profession. However, automation brings about a completely different route to traditional theoretical translation frameworks and cognitive models since MT now drives the translation process in many professional contexts and the final product is the result both of translation decisions made by a machine based on bottom up sources and decisions made by professional practitioners (top down).

3.3 Linguistic and Technological Competences

Translation training programmes have taken steps to place students at the heart of the learning process by making the learner a participant in all activities applied to authentic contexts as an experiential learner including translation company

simulations, internships and work placements, as only through authentic tasks will they be able to apply knowledge in real-life scenarios (Kiraly 2000). At the same time, programmes of study are also incorporating the teaching of CAT tools to address technological competences (Doherty/Kenny/Way 2012; Doherty/Moorkens, 2013; Austermühl 2013; O'Hagan 2013; Sikora 2014; Gaspari/Almaghout/Doherty 2015; Mellinger 2017; Rothwell/Svoboda 2017) and are experimenting with NMT by contrasting its use with previous MT paradigms to analyse technological advances in the profession (Moorkens 2017). These training practices have led to a professionalisation process in the curriculum where technology is considered core in the training of translators.

Indeed, as mentioned above, the rise of technologies and consequent professional industry practices are being addressed in the translation classroom. At European level, projects such as OPTIMALE and networks such as the EMT, Lind web and ELIA exchange have opened avenues of collaboration between academia and industry and have highlighted the need for translation training institutions to incorporate current professional trends including digital tools. Hence, it stands to reason that, if translation is deemed a professional activity and automation (technology) is part of it, translation students should be trained to be able to practise in the professional world, the same way that we expect lawyers or doctors to be competent and able to practise in their professional fields after graduating and training. This issue of competence has been widely addressed in the literature with the creation of competence frameworks and models with sub-competences created for specific purposes and specifics contexts (for example PACTE 2001, 2005; Kelly 2005; EMT 2009; EMT 2018) that have also been scrutinised in detail (see for example Pym 2003; Pym 2013; Plaza Lara, 2016; Yılmaz-Gümüş, 2017).

In this constant search of the Holy "competence" Grail, language and technology are currently highlighted as two of the most necessary competences by employers (EMT employer survey 2016) but they seem to be at odds, often situated at two opposing ends both in Translation studies and training programmes as 'language' has always been considered to be the quintessential human competence needed to translate and 'technology' is often conceived as the new necessary evil. In terms of Translation Studies scholarly work, this polarity can also be observed in the literature- those who cling to traditional translation methods and those who embrace the evolving nature of technologies dealing as a result with very different sets of training issues. This position relies on the argument postulated by Pym (2003): "the (competence) multi-componential models are forever condemned to lag behind both technology and the market" and "the active and intelligent use of TM/MT should eventually bring significant changes to the nature and balance of all other components, and thus to the professional profile of the person we are still calling a translator." (Pym 2013: 491).

Based on this argument and the evolution of both the profession and translator training there are overriding questions here and now that affect the future- how can trainers be equipped to teach translation nowadays given this perceived polarity in the teaching of competences and the bottom up shift mentioned before? Ultimately, what is the future of translation training?

3.4 New Pedagogies and New Training Methods

Given this scenario, the translator trainer needs to be first and foremost an inquisitive learner. Shreve 2000 in Kelly 2005: 27 advocated that educators should "prepare trainees to be flexible, adapt and constantly learn new skills" and also have the task to "foresee likely future developments". With the absence of a crystal ball, the onus is on educators to tentatively predict the future to be able to mould curricula that are current and applicable to the realities of the profession. This involves their own training by keeping abreast of innovations in industry to bring professional practices into the curriculum.

Nonetheless, there are voices outside academia who claim that we are asking the wrong questions. For Bregman (2016: 171), rather than asking what competences are needed, we should be asking which knowledge and competences we *want* the new generations to have as "instead of anticipating and adapting, we'd be focussing on steering and creating"

> Education is consistently presented as a means of adaptation-as a lubricant to help you glide more effortlessly through life. On the education conference circuit, an endless parade of trend watchers' prophecy about the future and essential twenty-first-century skills, the buzzwords being "creative", "adaptable" and "flexible" (ibid)

This quote resonates with the statements made at the World Economic Forum (January 2018) by Jack Ma (Executive Chairman of Alibaba) who suggested that by 2030, 800 million jobs would be lost to automation as robots will replace humans as labour force in many contexts. This brings us back to the title of this paper and supports the idea of educators having a role to teach skills not directly related to "knowledge" as we have known it in traditional educational settings. As Kiraly (2015) understands it, teachers need to help build the knowledge by accompanying students in a multifaceted, multi-perspective adventure. Or, instead of knowledge- based information (something that robots can learn very quickly but can take years of training of a human), educators should be focussing on soft skills such as values, beliefs, independent thinking, creativity, teamwork and caring for others. All the soft skills, it seems, attached to emotions- areas that can be fostered in the classroom for the development of entrepreneurship and

employability to make trainees competent workers in the labour market (Rodríguez de Céspedes 2017).

In the case of translator training, it is also now clear that the competences of today will not be the competences of tomorrow as the traditional role of the translator evolves. If predictions come true that translation may be reduced to post-editing and quality control in the future, as MT becomes more accurate, the competences required of post editors of today divided into: core, linguistic and instrumental (Torrejón/Rico 2012) will not be the competences of the future either. Hence conceivably, trainers should also focus on honing traditional and 'unique' human skills such as first language proficiency and mastery of language skills that involve creativity. This will mean going back to the grassroots, something that according to Yılmaz-Gümüş (2017) has been under-estimated in recent years as the acquisition of foreign language or languages has been favoured over the mastering of the first mother tongue.

What about technology? Translation educators cannot ignore the developments unfolding in the profession. Educators are facilitators by nature and in the current context they need to be aware of technological advances but who trains them with this knowledge? Academia does not have the means to replicate or invest in technology the same way big software corporations or LSPs do. Is there a place for the teaching of 'human' translation skills? One of the conclusions reached at the European Union Translating Europe Forum (TEF) entitled "New skills, new markets, new profiles" was that big companies and LSPs will keep using and investing in MT and post editing, and it is smaller companies or freelancers who can still provide a niche service of a "Boutique Translation" approach (Sevener, TEF 2017) where translations that need a 'unique' and tailor-made creative need will find their niche and where linguistic creativity is favoured over technological *savoir faire*. Gouadec (2017, ibid) also talked about "meta-competences" whereby the key for all stakeholders (professionals, trainers and trainees) will be the skill to adapt to changes. Garcia (2015) also reminds us that "it takes years to become a proficient translator, and if there is a fast track then it involves good mentoring, not good machines. Machines are talent-agnostic."

With all these arguments in mind, as the translation profession evolves and automation gains ground, training (and trainers) need to keep adapting to the new advances. Certainly, translation technology is becoming an essential part of a translation trainee's learning process but where will traditional linguistic skills lie? One way to find out the current balance (linguistic versus technological) involves trainers visiting translation companies to hear from the horse's mouth. This implies an epistemological shift from what trainers know to what employers know, think and do about translator training. In my opinion, only then conclu-

sions can be reached as to relevant ways forward in the training of future translators.

4 Observations at Translation Companies

4.1 Aims and Context

What is the balance between managing the new technological tools and mastering the classic skills necessary for first-rate translation? The aim of the study under analysis is to consider how trainers can best prepare their translation graduates for employment in the language industry. This pilot study, as part of a bigger scale project funded by the Faculty of Humanities and Social Sciences (University of Portsmouth), investigates training practices used by Language Service Providers (LSPs) to consider what skills and competences are honed, what gaps there are between these and HEIs' provision, and ways of integrating and/or balancing such skills into university level curricula. The research aims to identify the training provided within the translation industry to new employees, to disseminate findings and to provide translation training in Higher Education that responds to the evolution of the profession in the 21st century. In turn, LSPs will benefit from the line of communication offered by academia to also inform their own training (ultimate impact in the profession).

Translation trainers generally learn about professional practices by being practitioners themselves, by researching what other professionals and LSPs do, by inviting professionals to university seminars or by sending students to do internships and work placements who then report back on their experiences. There have been studies analysing translators and project managers at work. However, to my knowledge, few trainers have reported on first-hand research by spending time at translation companies to witness what is taught *in situ* once graduates leave academia and gain employment with them. The conclusions from the University of Portsmouth focus group study "When Translation meets Technologies: Language Service Providers in the Digital age" aroused my curiosity to conduct further research and it brought me to visit translation companies where I could look into the training practices of today's industry.

4.2 Methodology

The methodology used for this study is based on action research where the trainer-researcher immerses herself in the company's training cycle. The results of this

primary qualitative-type research derive from observations typically involving the trainer spending a full working week (circa 37 hours) at the employers' premises and from semi-structured interviews with employers. This approach also draws from Phenomenology defined by Finlay (2008: 173) as "an umbrella term encompassing a philosophical movement and a range of research approaches. It is a way of seeing how things appear to us through experience. More than a method, phenomenology demands an open way of being- one that examines taken-for-granted human situations as they are experienced in everyday life but which go typically unquestioned". This truly makes the trainer-researcher an authentic, experiential learner, a process which starts with a curiosity that is turned into research questions. The researcher begins to engage a phenomenological attitude by keeping a diary of what is experienced at every stage of the training cycle, which is "a special way of seeing with fresh eyes" (Finlay 2008). In our context, the study is influenced by phenomenology as the researcher, who becomes observer of the training cycle, follows the training workflow at the same time as the trainee allowing for description of experiential learning from an objective standpoint and "remaining open to new understanding-to be open to the phenomenon-to go beyond what they already know from experience or through established knowledge" (Finlay, ibid). As a qualitative-type study and to reach conclusions, ultimately the analysis will still need a certain amount of subjectivity to be able to contextualise the observed patterns.

In terms of data collection, interviews with employers are recorded and transcribed. All employers are asked the same questions to draw conclusions from similar data.

4.3 Profile of the Pilot Company

The first company where observations took place is a UK translation company certified to ISO 17100, in 72nd place in the world based on turnover and with more than 120 members of staff. The company's headquarters are in the UK but they have three other offices- one other in the UK and two elsewhere in Europe. The company translates an average volume of 60+ million words per year with 400 translation companies as direct clients. They have 70+ in-house linguists, teams in four core language combinations, more than 45 account Linguists and around 25 Project Managers (many also trained translators). 55 % of their translators are freelancers. The company works both for the public sector (including UK government and EU) and the private sector (both big, world leader translation corporations and smaller companies).

The company follows ISO 17100 (EN 15038) translation services standard and invests heavily in their employees' Continuing Professional Development (CPD).

They use the following quality metrics: TAUS Dynamic Quality Framework (DQF), EU-funded QT LaunchPad and Multidimensional Quality Metrics (MQM). The company has strong links both with academia and industry stakeholders by collaborating in various projects and networks.

4.4 Description of Training Cycle and Findings

In terms of training contents and workflows, the in-house training period starts with a week-long induction period, an intensive week where the new employee learns about the company and its workflows, in-house processes and translation technology tools. Induction takes place with a combination of face-to-face tutorials, live or recorded webinars and self-studies via live wiki-links. Day one involves learning about the company, its internal communication channels (Outlook, Yammer, Skype for business, intranet page which is Microsoft-based) and IT training practicalities and trouble-shooting protocols. On day two, the trainee is shown details of a project duration with schedules determined by the project manager and assigned via the inhouse software and an overview of the CAT tools used by the company (including MemoQ, SDL Trados Studio, Across, Google GTT). Day three starts with a hands-on live introduction to MemoQ, the company's preferred tool (basic navigation tips, concordancing, quality assurance etc) translation memories and term-based glossaries and a detailed explanation of project cycles. The new translator (a junior translator is expected to translate 1000–1200 words per day) spends the afternoon with an experienced translator to start a mock translation using MemoQ. On day 4, the role of MT and post-editing in the company is explained. An outline of common post-editing errors is shown together with expectations from customers and freelancers. The rest of the day is devoted to further translation skills practice. Day 5 is devoted to translation resources and work-flows, quality assurance and project life and milestones including the introduction to the company's personal workload management system where project managers check the translator's productivity (words per day/per hour) and their capacity. Once the trainee becomes a proficient translator (average 2,000–2,500 words per day), there is a rota for inclusion of incoming "small jobs" where it is easy to identify who has capacity to deal with the job.

After the first induction week, the trainee for this company was staying for a further three weeks supervised by a senior staff translator and the management team working remotely from then on. At the company, new translators become fully trained after one or two years depending on language combination. During the training period, all their work is revised by colleagues and they also do revision work themselves to become familiarised with new genres.

The observations and interview with the manager allow for an insight into current training practices and confirmed the following points:

1. The company invests in technology to maximise productivity and to make processes agile in the overall coordination and the running of the translation commissions (from beginning to end including the use CAT tools, MT and in-house PM systems). Automation is key for successful implementation of innovative practices to also meet customers' needs.
2. The training period focuses on the technological skills needed to be competent in today's profession (linguistic skills are a given).
3. Proficient language and linguistic skills (correct grammar, style, register etc) are still the main requisites sought after by employers. Candidates need to pass a translation test and employers look for promise and "technological aptitude". However, the manager in this company is finding that candidates are lacking the necessary linguistic and translation skills.
4. The future of the translator using traditional translation cognitive skills will be sought after in the production of content at the high-end, premium side of the market for example in marketing communications involving transcreation; or in content creation, that is- taking a client brief and producing language content from scratch to match that brief in the local language.

Conclusions and the Future of Translator Training

Automation brings challenges to the translation profession but also opportunities. The jobs that are here to stay are the ones involving creativity, caring (human interaction) and making decisions (Frey/Osborne 2013). Moreover, the core of the translation activity has transformed so much that "a discussion of 'translation' as one single (business) activity is perhaps impossible or even pointless now" given the current "fluid state" of its reconceptualization (Sakamoto 2018). In turn, this means that whilst the outlining of competences is useful for the practical application of skills in the classroom, translation competences themselves are also in a fluid state. Therefore, employability skills, understood as the ability to stay up to date to find employment and to think creatively in new situations will be crucial to adapt to new contexts where technology is taking centre stage (Rodríguez de Céspedes 2017). This applies to both translation trainers and trainees. As educators, we face the dilemma of providing curricula that adapts to the realities imposed by automation (including MT and crowdsourcing- bottom up shift) and hence one way forward is to keep focussing on honing language skills and to train versatile and talented linguistic and cross-cultural experts. Furthermore, according to Davenport and Kirby (2015) industry demands will reframe the

threat from automation to augmentation, understood as the use of technology to help humans work better and faster where machines are perceived as collaborators in the search of creative solutions to problems. Indeed, CAT tools and MT are proof of this symbiotic "machine-human" relationship as machines are optimising human time and speed and facilitating workflows.

Crucially, trainers need to be aware of professional demands (by for example visiting translation companies) and come up with innovations in the classroom to foster the mastering of the first language first and foremost and the ability to write for different contexts and genres to distinguish professional work from crowdsourcing. Moreover, as a complement to the already innovative practices taking place in the classroom, this paper offers additional answers by conducting research in translation companies thus helping to keep up with advances and inform training practices that are useful to the future of the profession. If we go by Tirry's statement (2018) "You can learn how to use a CAT tool in 2 or 3 weeks but not a language" perhaps trainers should keep an eye in the past and keep fostering language and translation skills and another in the future to teach new technologies to strike a balance. This partly answers the questions to this paper as the effect of the bottom-up shift described earlier on languages and the profession is still unknown.

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